

WHAT IS CLAIMED IS:

1. A lithographic apparatus comprising:
an illumination system to provide a beam of radiation on a flat article to be placed in a beam path of said beam of radiation; and
an article handler to handle said article during placement or removal of said article, said article handler comprising an electrode and a dielectric layer in order to form an electrostatic clamp to electrostatically clamp said article.
2. A lithographic apparatus according to claim 1, wherein said article handler comprises at least three mutually distanced contact members for contacting the article.
3. A lithographic apparatus according to claim 2, wherein the contact area of said contact members is less than about 80 mm².
4. A lithographic apparatus according to claim 1, wherein said apparatus further comprises a presence detector to detect a presence of said article through a measured capacity formed by said electrode, said dielectric layer, and said article to be handled.
5. A lithographic apparatus according to claim 1, wherein said dielectric layer is wear resistant.
6. A lithographic apparatus according to claim 5, wherein the dielectric layer is provided with protrusions to provide a gap between the dielectric layer and the article to be handled.
7. A lithographic apparatus according to claim 6, wherein said gap ranges between about 0.1 and about 5 microns.
8. A lithographic apparatus according to claim 1, wherein said dielectric layer comprises at least one of SiO₂ and SiN.

9. A lithographic apparatus according to claim 1, wherein said dielectric layer is less than about 50 microns, and a dielectric constant is greater than about 3.

10. A lithographic apparatus according to claim 9 wherein said electrostatic clamp is designed to provide a clamping pressure greater than about 1.10^4 Pa.

11. A lithographic apparatus according to claim 1, wherein said article handler comprises two electrodes.

12. A lithographic apparatus according to claim 11, wherein said electrodes are formed by an Si layer that is bonded on an isolator.

13. A lithographic apparatus according to claim 12, wherein said isolator comprises a substrate comprising an SiO₂ layer or a machined isolating substrate.

14. A lithographic apparatus according to claim 1, wherein said electrode comprises a metal pad bonded to said electrode in order to form a terminal for wiring said electrode.

15. A lithographic apparatus according to claim 14, wherein said metal pad is formed by an Al layer that is bonded to said electrode.

16. A lithographic apparatus according to claim 1, further comprising an article support to support said article to be placed in a beam path of said beam of radiation on said article support, the article handler being provided in the article support.

17. A lithographic apparatus according to claim 1, wherein said article support is a support to support a patterning structure, the patterning structure configured to impart the beam of radiation with a pattern in its cross-section.

18. A lithographic apparatus according to claim 1, wherein said article support is a substrate support for supporting a substrate to be patterned by a patterned beam of radiation onto a target portion of the substrate.

19. A method of providing an electrostatic clamp for an article handler, comprising:

- providing a conducting layer on an isolator;
- forming an electrode from said conducting layer by reactive ion etching;
- providing a hole in said isolator to form a terminal on said electrode;
- oxidizing said electrode so as to form a dielectric layer thereon;
- removing oxide from said terminal; and
- applying wiring through said hole to said terminal.

20. A method according to claim 19, further comprising:

- covering said terminal with a metal layer.

21. A device manufacturing method comprising:

- providing a substrate;
- handling said substrate by an article handler provided with an electrostatic clamp;
- detecting a presence of said substrate by detecting a capacity formed by said electrostatic clamp and said substrate;
- providing a beam of radiation using an illumination system;
- using a patterning structure to impart the projection beam with a pattern in its cross-section; and
- projecting, after detecting the presence of said substrate, the patterned beam of radiation onto a target portion of the substrate.

22. A lithographic apparatus comprising:

- an illumination system that provides a beam of radiation to an article;
- a support that supports the article;
- an article handler configured to handle the article during placement of the article on, and removal of the article from, the support; and

an electrostatic clamp configured to clamp the article to the article handler, the electrostatic clamp comprising an electrode and a dielectric layer.

23. A lithographic apparatus according to claim 22, wherein the article handler is integrated with the support.

24. A lithographic apparatus according to claim 22, wherein the article comprises a wafer.